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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

DADA, BEEMNET W

ART UNIT	PAPER NUMBER
2135	

DATE MAILED: 07/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/976,885

Applicant(s)

BUSH ET AL.

Examiner

Beemnet W. Dada

Art Unit

2135

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

1. This office action is in reply to an amendment filed on May 08, 2006. Claims 1-29 are pending.

### *Response to Arguments*

2. Applicant's arguments filed 05/08/2006 have been fully considered but they are not persuasive. Applicant argues that, Reference V only teaches permissions to access resources and not permissions to access a "first trusted class", and therefore Reference V fails to teach controlling access to a first trusted class by untrusted class or a second trusted class based upon privilege information associated with the first trusted class. Examiner disagrees.

3. Examiner would point out that the term 'class' in object oriented programming refers to classes, objects, threads and processes [see also, specification page 6, paragraph 022]. In this case, reference V teaches Domain-Based access Control, wherein classes, objects and threads belong to a certain domain [see section 2.3, 1<sup>st</sup> paragraph]. Reference V further teaches interaction between multiple domains, for example, application domain and system domain (see page 5, section 2.4, paragraphs 3-5, where it states "... **where a system domain invokes a method from an application domain, such as when an AWT system code calls an applet's paint method to display the applet, it is again crucial that at any time the effective access rights are the same as current rights enabled in the application domain.**" Examiner would point out that, a method/function in object-oriented programming is part of a class. In this case invoking/calling a method/function from one domain to another domain by controlling access rights, means, access to the class itself by another class in a different domain. Examiner asserts the art on record teaches the claim limitations and therefore respectfully maintains the rejection.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-6, 10-21 and 25-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gong WO 99/30217 in view of Gong et al. "Going Beyond the Sandbox: An Overview of the New Security Architecture in the Java Development Kit 1.2" (hereinafter Reference V).

6. As per claim 1 and 25, Gong teaches a method for providing security, comprising:  
separating a plurality of classes into at least a first trusted class and an untrusted class [page 3, lines 7-17 and page 8, line 37- page 9, line 24];

associating privilege information (i.e., permissions) with the first trusted class [page 3, lines 7-24]; and

Gong further teaches an access control method wherein an instance of a class within one domain accessing another instance of a different class within a different domain (i.e., object a invokes b which invokes c, see page 13, lines 17-27, figure 6 and access controller figs 2 and 5).

Gong does not explicitly teach controlling access to the first trusted class by the untrusted class or a second trusted class based upon the privilege information associating with

the first trusted class. However, within the same field of endeavor Reference V teaches an access control method including controlling access to a first trusted class by an untrusted class or a second trusted class based upon privilege information associating with the first trusted class [see page 5 and 6, section 2.4 Domain-Based Access Control]. It would have been obvious to one having ordinary skill in the art at the time of applicant's invention to employ the teachings of Reference V within the system of Gong in order to further control access between different classes thereby enhancing security of the system.

7. As per claim 18, Gong teaches a secure virtual machine instruction processor comprising:

a first memory space for storing an untrusted class and a second memory space for storing a first trusted class [page 13, lines 1-9, page 3, lines 7-17 and page 8, line 37- page 9, line 24];

a privilege manager for managing privilege information associated with the first trusted class [page 3, lines 7-24]; and

Gong further teaches an access control method wherein an instance of a class within one domain accessing another instance of a different class within a different domain (i.e., object a invokes b which invokes c, see page 13, lines 17-27, figure 6 and access controller figs 2 and 5).

Gong does not explicitly teaches controlling access to the first trusted class by the untrusted class or a second trusted class based upon the privilege information associating with the first trusted class. However, within the same field of endeavor Reference V teaches an access control method including controlling access to a first trusted class by the untrusted class or a second trusted class based upon privilege information associating with the first trusted

Art Unit: 2135

class [see page 5 and 6, section 2.4 Domain-Based Access Control]. It would have been obvious to one having ordinary skill in the art at the time of applicant's invention to employ the teachings of Reference V within the system of Gong in order to further control access between different classes thereby enhancing security of the system.

8. As per claims 2, 3, 20, 21, 26 and 27, Reference V further teaches granting/refusing privileges based upon permissive attribute of privilege information and the step of controlling access depends upon the privilege [see page 5 and 6, section 2.4 Domain-Based Access Control].

9. As per claim 4, Reference V further teaches permitting access to the trusted class in a predetermined manner if the privilege permits the access [see page 5 and 6, section 2.4 Domain-Based Access Control].

10. As per claim 5, Reference V further teaches denying the access in a predetermined manner if the access to the first trusted class in the predefined manner is contrary to the privilege [see page 5 and 6, section 2.4 Domain-Based Access Control].

11. As per claim 6, Reference V further teaches wherein the privilege allows at least one of the group of creating a subclass of the first trusted class, creating a new instance of the first trusted class, allowing the untrusted class or second trusted class to invoke a method of the first trusted class, and allowing the untrusted class or second trusted class access to trusted data of the first trusted class [see page 5 and 6, section 2.4 Domain-Based Access Control].

Art Unit: 2135

12. As per claim 10, Gong further teaches allocating a separate memory space for the first class and untrusted class [page 13, lines 1-9, page 3, lines 7-17 and page 8, line 37- page 9, line 24].

13. As per claims 11-14 and 19, Gong further teaches the privilege information further comprises a plurality of permissive attributes [see page 9, line 28 – page 10 line 22].

14. AS per claims 15-17 and 28-29 Reference V further teaches controlling access to the first class including detecting when a request for a trusted class operation is made by the untrusted class or second trusted class determining that the trusted class operation is authorized based on the privilege information associated with the first trusted class and allowing access to the first trusted class according to the trusted class operation [see page 5 and 6, section 2.4 Domain-Based Access Control].

15. Claims 7-9 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gong WO 99/30217 in view of Reference V as applied above and further in view of Papa et al. (Ref U).

16. As per claims 7-9 and 22-24 Gong-Reference V teaches the method as applied to claims 1 and 18 above. Gong-Reference V is silent on separating classes further comprising associating a package with a trusted class. However, Papa et al teaches associating a package with a trusted class, wherein associating the package further comprises encapsulating the first trusted class within the package [see page 67-68, sections 2.1, java package protection model, 2.2 authorization model]. It would have been obvious to one having ordinary skill in the art at the

time of applicant's invention to employ the teachings of Papa et al within the system of Gong-Reference V thereby allowing associating a package with a trusted class and providing protection within a package level.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Beemnet W. Dada whose telephone number is (571) 272-3847. The examiner can normally be reached on Monday - Friday (9:00 am - 5:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Y. Vu can be reached on (571) 272-3859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.




Art Unit: 2135

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Beemnet Dada

July 17, 2006

  
HOSUK SONG  
PRIMARY EXAMINER